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10/814,263

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Henrik Pettersson

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EXAMINER

MOWLA, GOLAM

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

08/28/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/814,263	<b>Applicant(s)</b> PETTERSSON ET AL.	
	<b>Examiner</b> GOLAM MOWLA	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 16-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's amendment of 05/28/2008 does not place the Application in condition for allowance.
2. Claims 1 and 16-17 are pending. Applicant has amended claims 1 and 16, cancelled claims 2-15 and 18.

### ***Status of the Objections or Rejections***

3. Due to Applicant's amendment of claims 1 and 16, all rejections from the office Action mailed on 01/25/2008 are withdrawn. New ground(s) of rejection under 35 U.S.C. 103 is/are necessitated by the amendments.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kay (US 6069313).

With respect to claim 1, Kay discloses a sealed monolithic electrochromic system (see fig. 1; col. 1, line 61 to col. 2, line 3) comprising:

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- a front plane (top cover 8; fig. 1) consisting of at least one porous monolithic electrochemical cell (see fig. 1 which discloses 3 cells) located on a substrate (conducting coating 2; see fig. 1), said at least one porous monolithic electrochemical cell having a pattern (see fig. 1 and example on col. 3, lines 14-27) and an edge (see fig. 1) surrounding said pattern, wherein said at least one porous monolithic electrochemical cell comprises a working electrode (nanoporous photoelectrode 4; see fig. 1), an insulating layer (insulating layer 5; see fig. 1), a counter electrode (porous counterelectrode 6; see fig. 1), and an electrolyte (see col. 2, lines 43-45; see also abstract), wherein electrolyte is absorbed into said at least one porous monolithic electrochemical cell ("The electrolyte is fixed....in the porous matrix of coatings 4 to 6 and does not constitute an additional, free flowing layer", col. 2, lines 43-45); and
- a rear plane (transparent conducting substrate 1; fig. 1) consisting of a sealing material (col. 3, lines 8-13) that surrounds said at least one porous monolithic electrochemical cell (in the instant case it surrounds all three cells) and is located in said edge (see fig. 1);
  - wherein said front plane (top cover 1) and rear plane (1) are sealed (Examiner notes that the silicone or organic polymer, which is used to fill the gap 7, provides sufficient sealing) along the edge surrounding said pattern (see fig. 1).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kay in view of Loutfy et al. (4175981), Kawamura et al. (US 4224081) and Ellis et al. (US 4250398).

With respect to claim 16, Kay discloses a sealed monolithic electrochromic system comprising:

- a substrate (transparent conductive substrate 1; see fig. 1) supporting at least one porous monolithic electrochemical cell (see fig. 1 which shows 3 cells), said porous monolithic electrochemical cell having a pattern (see fig. 1 and example on col. 3, lines 14-27),
  - wherein said at least one porous monolithic electrochemical cell (any one of three cells in fig. 1) comprises

- a working electrode (porous photoelectrode 4; see fig. 1),
  - an insulating layer (insulating layer 5; see fig. 1),
  - a counter electrode (porous counter electrode 6; see fig. 1),
  - an electrolyte (see col. 2, lines 43-45; see abstract), and
  - contacts (contacts 9 and 10; see fig. 1) for said working electrode (4) and said counter electrode (6),
- wherein said electrolyte is absorbed into each of the said porous monolithic electrochemical cell ("The electrolyte is fixed....in the porous matrix of coatings 4 to 6 and does not constitute an additional, free flowing layer", col. 2, lines 43-45); and
- a sealing material (the silicone or organic polymer, which is used to fill the gap 7, provides sufficient sealing; col. 3, lines 8-13),
    - wherein said sealing material (material that fills the gap 7; see fig. 1; col. 3, lines 8-13) is located on an edge of said pattern (see fig. 1) and covers each of said porous monolithic electrochemical cells (the sealing material covers at least a portion of said cells; see fig. 1).

Although the reference does not explicit teach the contacts are utilized for interconnection with at least one electric circuit, one of ordinary skill in the art realizes that such use of contacts is to interconnect with the power source/load or electric circuit. Loutfy shows the use of contacts (leads 15; fig. 1; col. 3, lines 19-32) for interconnection with an electrical circuit (load; see fig. 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the teaching of Loutfy and utilize the contacts of Kay to interconnect the system of Kay with an electrical circuit as such use interconnection of contacts to an electrical circuit is conventional in the art to provide connection between the system/cell and electrical circuit, as shown by Loutfy.

One reading Kay as a whole would have readily appreciated that any organic material can be used to fill the gaps. However, Kay is silent as to whether the organic material comprises comprising an adhesion ply of plastic and also silent to a laminate comprising at least an adhesion layer and a barrier layer, wherein the adhesion layer is placed over said adhesion ply.

It is well known in the art to use an adhesion ply of plastic to as a sealing material to seal two different layers/surfaces of a module/device/system. Kawamura discloses a solar cell (see fig. 1; col. 3, lines 42-58) wherein thermoplastic adhesive (polyvinylbutyral adhesive; see col. 3, lines 42-58) is utilized as filler or sealing material because of its excellent weather-proof characteristics (see col. 2, lines 27-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the thermoplastic adhesive of Kawamura in the gap (7) of Kay to fill the space and to seal the substrate with the top cover (8) and substrate) because of its excellent weather-proof characteristics as shown by Kawamura.

Although Kay as modified by Kawamura teaches that the sealing material comprising an adhesion ply of plastic, both of the references are silent as to a laminate

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comprising at least an adhesion layer and a barrier layer, wherein the adhesion layer is placed over said adhesion ply.

Ellis discloses a laminate of adhesive layer (23; fig. V; col. 4, lines 48-68) and a barrier layer (Al foil 20; fig. V) which is adhered to the top cover (polyester film 21; fig. V) and placed on top of the adhesive (adhesive 22, fig. V)

It would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the laminate of Ellis in the system of Kay as modified by Kawamura, because such use of a laminate is conventional in the art as it provides moisture-resistance and water-resistance due to its moisture and water impermeability (see abstract of Ellis).

With respect to claim 17, Kay as modified by Kawamura and Ellis further discloses that the barrier layer consists of a metal foil (the barrier layer 20 of Ellis is made of Al foil; see fig. V; col. 4, lines 48-68).

### ***Double Patenting***

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).



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A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1 and 16 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 2 of U.S. Patent No.

7405356. Although the conflicting claims are not identical, they are not patentably distinct from each other because they encompass the every limitation of the instant claims.

11. Claim 17 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 2 of U.S. Patent No. 7405356 (hereafter '356) in view of Ellis.

Claim 2 of '356 encompass every limitations of the instant claim 17, except that it does not claim that the barrier layer is consists of metal foil.

However, it is well known in the art to have used a barrier layer consists of Al metal foil (the barrier layer 20 of Ellis is made of Al foil; see fig. V; col. 4, lines 48-68) because of its improved moisture-resistance and water-resistance due to its moisture and water impermeability (see abstract of Ellis).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used the metal foil of Ellis as the barrier layer of '356

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because it provides moisture-resistance and water-resistance due to its moisture and water impermeability as taught by Ellis.

### ***Response to Arguments***

12. Applicant's arguments with respect to claims 1 and 16-17 have been considered but are moot in view of the new ground(s) of rejection.

Due to Applicant's amendment to claims 1 and 16, a new ground(s) of rejections is made in view of Kay, Kawamura and Ellis.

#### **Claim Rejections under 35 U.S.C. § 103 (a)**

##### **Claims 1 and 16-17**

Applicant argues that "the prior art references, Wu and Nakamura, alone or in combination, do not include the elements underlined for claims 1 and 16, in the above paragraphs, for at least the reasons discussed below. First, Wu does not disclose or suggest an electrochromic system. Second the section of Wu identified for a "pattern of a porous structure supported on a substrate" describes a region of the electrochemical cell lacking a layer of the second electroactive material. This is not the same as a porous monolithic electrochemical cell located on a substrate. Applicants can find no indication in Wu of a substrate supporting one or more porous monolithic electrochemical cells. Wu at Col. 2, lines 38-40 describes a porous substrate which is not the same as a porous monolithic electrochemical cell. Applicants can find no indication that the electrochemical cell of Wu has any porosity. Third, only the porous substrate of Wu is filled with electrolyte which is not the same as the electrolyte

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adsorbed by a porous monolithic electrochemical cell” (see Remarks, page 5, line 17 to page 6, line 5).

The argument is directed to the amended claim and moot in view of new ground(s) of rejection as provided above in view of Kay, Kawamura and Ellis.

Applicant also argues that “regarding amended claim 16 in particular, Applicants fail to find any indication in Nakamura where the sealing material includes a barrier layer” (see Remarks, page 6, lines 6-7).

The argument is directed to the amended claim and moot in view of new ground(s) of rejection as provided above in view of Kay, Kawamura and Ellis.

### ***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Correspondence/Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GOLAM MOWLA whose telephone number is (571) 270-5268. The examiner can normally be reached on M-F, 0900-1700 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ALEXA NECKEL can be reached on (571) 272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/G. M./

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/Alexa D. Neckel/

Supervisory Patent Examiner, Art Unit 1795